

In the Claims

Claims 1-27. (Canceled).

Claim 28. (Currently amended) A soluble polypeptide comprising in sequence one to three short consensus repeats (SCR) of long homologous repeat A (LHR-A) (SEQ ID NO: 59) selected from the group consisting of ~~SCR 1, 2, 3, and 4~~ SCR1, SCR2 and SCR 3, and including at least SCR3, wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, ~~Gly at position 230, Ser at position 235, and His at position 236~~, wherein each position is based upon the mature LHR-A sequence.

Claims 29-41. (Canceled).

Claim 42. (Currently amended) A soluble ~~derivative~~ polypeptide conjugate of a soluble polypeptide, wherein said soluble derivative comprises comprising

(I) a soluble polypeptide that has in sequence one to three short consensus repeats (SCR) of long homologous repeat A (LHR-A) (SEQ ID NO: 59) selected from the group consisting of ~~SCR 1, 2, 3, and 4~~ SCR1, SCR2 and SCR 3, and including at least

SCR3, wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, ~~Gly at position 230, Ser at position 235, and His at position 236,~~ and

~~wherein said soluble derivative comprises (II)~~ at least two heterologous membrane binding elements with low membrane affinity covalently associated with the polypeptide, wherein the elements are capable of interacting independently and with thermodynamic additivity with components of cellular membranes exposed to extracellular fluids, and wherein the membrane binding elements have an affinity with a dissociation constant of between at least about 1 μ M and 1mM.

Claims 43-48 (Canceled).

Claim 49. (Currently amended) A process for preparing a soluble ~~derivative~~ polypeptide conjugate of a soluble polypeptide, wherein ~~said the~~ soluble ~~derivative~~ polypeptide comprises in sequence one to three short consensus repeats (SCR) of long homologous repeat A (LHR-A) (SEQ ID NO: 59) selected from the group consisting of ~~SCR 1, 2, 3, and 4~~ SCR1, SCR2 and SCR 3, and including at least SCR3, wherein at least one of the SCR native amino acids is substituted, wherein the substitute

amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, ~~Gly at position 230, Ser at position 235, and His at position 236,~~ comprising

expressing DNA encoding the polypeptide ~~portion of said derivative~~ in a recombinant host cell and recovering the ~~product~~ soluble polypeptide and thereafter post translationally modifying the soluble polypeptide to bind membrane binding elements to the polypeptide, thereby resulting in the polypeptide conjugate.

Claim 50. (Currently amended) A pharmaceutical composition comprising (A) a therapeutically effective amount of a soluble polypeptide comprising in sequence one to three short consensus repeats (SCR) of long homologous repeat A (LHR-A) (SEQ ID NO: 59) selected from the group consisting of ~~SCR 1, 2, 3, and 4~~ SCR1, SCR2 and SCR 3, and including at least SCR3, wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, ~~Gly at position 230, Ser at~~

~~position 235, and His at position 236,~~ and (B) a pharmaceutically acceptable carrier or excipient.

Claim 51. (Canceled).

Claim 52. (New) A soluble polypeptide comprising in sequence short consensus repeats (SCR) 1, 2 and 3 of long homologous repeat A (LHR-A) (SEQ ID NO: 59), wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, wherein each position is based upon the mature LHR-A sequence.

Claim 53. (New) The soluble polypeptide of claim 52, wherein at least one SCR3 native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177.

Claim 54. (New) The soluble polypeptide of claim 53, wherein the only amino

acid substitutions are in SCR3.

Claim 55. (New) The soluble polypeptide of claim 53, wherein the soluble polypeptide is CM7 (SEQ ID NO.1).

Claim 56. (New) The soluble polypeptide of claim 55, wherein the soluble polypeptide further comprises a C-terminal cysteine (SEQ ID NO. 31).

Claim 57. (New) A pharmaceutical composition comprising (A) a therapeutically effective amount of a soluble polypeptide comprising in sequence short consensus repeats (SCR) 1, 2 and 3 of long homologous repeat A (LHR-A) (SEQ ID NO: 59), wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, wherein each position is based upon the mature LHR-A sequence, and (B) a pharmaceutically acceptable carrier or excipient.

Claim 58. (New) The pharmaceutical composition of claim 57, wherein at least one SCR3 native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position

156, Arg at position 159, Lys at position 161, and Lys at position 177.

Claim 59. (New) The pharmaceutical composition of claim 58, wherein the only amino acid substitutions are in SCR3.

Claim 60. (New) The pharmaceutical composition of claim 58, wherein the soluble polypeptide is CM7 (SEQ ID NO.1).

Claim 61. (New) The pharmaceutical composition of claim 60, wherein the soluble polypeptide further comprises a C-terminal cysteine (SEQ ID NO. 31).

Claim 62. (New) A soluble polypeptide conjugate comprising

(I) a soluble polypeptide that has in sequence short consensus repeats (SCR) 1, 2 and 3 of long homologous repeat A (LHR-A) (SEQ ID NO: 59), wherein at least one of the SCR native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Val at position 4, Asp at position 19, Ser at position 53, Lys at position 57, Ala at position 74, Asp at position 79, Arg at position 84, Pro at position 91, Asn at position 109, Lys at position 116, Val at position 119, Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177, wherein each position is based upon the mature LHR-A sequence, and

(II) at least two heterologous membrane binding elements with low membrane affinity covalently associated with the polypeptide, wherein the elements are capable of

interacting independently and with thermodynamic additivity with components of cellular membranes exposed to extracellular fluids, and wherein the membrane binding elements have an affinity with a dissociation constant of between at least about 1 μ M and 1mM.

63. (New) The soluble polypeptide conjugate of claim 62, wherein at least one SCR3 native amino acids is substituted, wherein the substitute amino acid is selected from the group consisting of Ala at position 132, Thr at position 137, Ile at position 139, Ser at position 140, Tyr at position 143, His at position 153, Leu at position 156, Arg at position 159, Lys at position 161, and Lys at position 177.

64. (New) The soluble polypeptide conjugate of claim 63, wherein the only amino acid substitutions are in SCR3.

65. (New) The soluble polypeptide conjugate of claim 63, wherein the soluble polypeptide is CM7 (SEQ ID NO.1).

66. (New) The soluble polypeptide of claim 65, wherein the soluble polypeptide further comprises a C-terminal cysteine (SEQ ID NO. 31).